



Learning Technologies Project Bulletin

Brought to you by NASA, BDM International, & West Virginia University

In the Spotlight

“Virtual Take Our Daughters to Work Day” Set for April 23

Tish Krieg
tkrieg@quest.arc.nasa.gov

Hundreds of thousands of young women will be able to chat with some of the nation's most prominent female leaders during NASA's “Virtual Take Our Daughters to Work Day” on Thursday, April 23.

This all-day event makes it possible for young people worldwide to interview 10 women from diverse fields who have reached the top of their respective professions.

To find out more about the event, to view a complete schedule, and to register, visit <http://quest.arc.nasa.gov/women>.

Among this year's group of luminaries scheduled to participate are Judy Woodruff, CNN anchor; Jessica Stern, expert on terrorism and mass destruction and the model for the film *The Peacemaker*; Chitra Divakiruni, novelist and author of the bestsellers *Arranged Marriage* and *Mistress of Spices*; Leslie Ann Jones, multiple Academy Award-winner for film scoring at Skywalker Sound; Donna Shirley, director of NASA's Mars exploration; Kim Polese, CEO of Marimba, Inc.; and Loretha Jones, executive producer of the Warner Bros. sitcom *The Parenthood*, who will chat on location from her new film *Fraternity Boys*.

Online from 6:00 a.m. - 4:00 p.m. (Pacific Daylight Time), each of the 10 select leaders will meet with students, parents, and schools worldwide to discuss career opportunities and offer insight into the professional and personal aspects of their lives.

NASA's “Virtual Take Our Daughters to Work Day” is designed to provide young people anywhere in the world who have Internet access with the opportunity to gain insight into their future career choices.

“We have designed this event to coincide with the national ‘Take Our Daughters to Work Day’ initiative and give young people who cannot otherwise dialogue with women in the workforce the chance to meet online and discuss opportunities available to them,” said Tish Krieg, executive producer of the event.

The event is sponsored by the Women of NASA project, one of many interactive projects provided by NASA's K-12 Internet Initiative and supported by the NASA Learning Technologies Project.

The Women of NASA project encourages girls to pursue math, science, and technology careers by interacting, via the Internet, with women who are working at high levels in their respective fields.

News Bytes

How to Get Your Site Listed on Search Engines

Bill Strathearn
bills@k12-dev.arc.nasa.gov

A lot of my time these days has been spent posting the Learning Technologies Channel (LTC) index page to search engines around the world. Along the way I've gathered quite a bit of information that may be of help to those of you who wish to give it a

try. Posting to search engines is highly recommended, and (so far, anyway) most of the big sites do not charge for an entry. This is an excellent way to increase your number of hits.

There is a site on the Web that contains links to 100 different search engines (<http://mmgco.com/top100.html>). The links, arranged by quality and size, range from a page that allows you to post to six of the biggest and most widely used engines to two-star sites you might not even know existed.

All of these sites are free to post to, and it would take six to eight hours to post to all of them. It is best to post to the top six first. This takes about 10 minutes and will

increase your site's visibility more than posting to 50 very small engines will. Each link takes you to that site's homepage or submission page, and there you will find relatively easy-to-follow instructions. Nearly all of the search engines will ask for your e-mail address and name, the name of the project, a description of the project, and some keywords.

A typical entry would look like this:
Project: Learning Technologies Channel
URL: <http://quest.arc.nasa.gov/ltc>
Description: Hosted by NASA's Quest Project, the Learning Technologies Channel (LTC) allows Internet users to attend live NASA and non-NASA lectures, work-

(continued on page 4)

Nothin' — but Net



Copy “Rights?” The Thin Line Between Yours and Mine

Erin Weikle
eweikle@rspac.ivv.nasa.gov

Technology allows images and words to be manipulated, copied, and transferred in ways once unimagined. It has also created problems in terms of copyrights. For instance, you may find a cool picture while surfing the Net and decide to add it to your newsletter. This may not seem like a big deal, but if you haven't received the proper authorization for its use, you are probably committing a copyright infringement.

What does copyright mean? A copyright is loosely defined as a group of rights exclusive to the creator and the work the creator has produced. Copyright law has existed since 1710 and must often adjust to suit new technologies. Copyright law can be generally explained as five basic rights:

Reproduction Rights - The right to make identical or substantially similar copies of the work.

Adaptation or Derivative Rights - The right to create or develop something from the original work.

Distribution Rights - The right to be the first one to sell the work.

Display Rights - The right to display the work publicly.

Performance Rights - The right to perform the work in public.

Courts are now looking into “the right of display” to determine how online copying may constitute copyright infringement.

While works are protected by copyrights, there are also some limitations to copyright law. When copyrighted material is used, for example, by a teacher for educational purposes, that falls under the “fair

uses” limitation of copyright law and is not a copyright infringement. The “idea dichotomy” is another limitation of copyright law. It means that a copyright can protect the expression of an idea but not the idea itself. A copyright does not give rights to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of how it's embodied.

Now that we know what is protected by copyright law, how can we establish how much of a copyrighted work can be used? There is no one way to determine how much of another's work you may use, especially with respect to digital images, without infringing on its copyright. There is no measurement, (number of pixels or percentage), for instance, that will let you absolutely determine whether you can use an image you found on the Web. However, there are some questions and tips that you can use as a guideline:

If you have incorporated another's work into your own, is that work still recognizable? If it is, there may be a copyright infringement.

Is your end result “substantially similar” to the original? You cannot just change the color or placement of an image and call it your own!

Apply the “Golden Rule” and don't use another's work in a way you would not want your own work to be used.

Always try to get permission for the use or manipulation of another's creations. It may cost money and there is no guarantee you will be able to obtain permission. Finding the copyright owner could also be difficult. Some places to start looking would be the Copyright Office, artist's unions and guilds, or a professional search organization.

Remember that if you use an unauthorized image and it does not fall under the “fair use” category, you have committed a copyright infringement.

The Internet has gathered information and images from around the world and placed them at our fingertips. Copyrights protect these created properties, while at the same time allowing for fair usage of them. Most countries have their own copyright laws or have an agreement to enforce the

copyright laws of another country. Be sure to check into the laws that apply to the copyright of any material that you wish to use. It helps to know basic copyright law so that you know why and how your work is protected. Even though access to material has grown via the Internet, the copyright is still there to protect the rights of the creator and the product of his or her creativity.

For more information on copyright issues, visit the US Copyright Office at <http://lcweb.loc.gov/copyright/>; Cornell University at <http://www.law.cornel.edu/usc/17/overview.html>; the Copyright Clearance Center at <http://www.copyright.com/owelcome.html>; or the Copyright Website at <http://www.benedict.com/>.

Got Art? RSPAC Graphics Wants Art, Logos from Your Project

Scott Gillespie
sgillespie@rspac.ivv.nasa.gov

The Graphics Department at the Remote Sensing Public Access Center (RSPAC) is looking for artwork and online graphics from your project. These graphics will be used in the *LTP Bulletin*, internal and external promotion of NASA's Learning Technologies Project, and other publicity.

The graphics should be at least 2x2 inches and black-and-white – something that reproduces well when photocopied. They should also have a resolution of between 100 and 300 dots per inch (dpi). (The lower the dpi, the lower the quality of the image). A project's logo is ideal.

“If you send us your project's logo, we'll have it on file and ready to use when illustrating your project's news, accomplishments, and other merits,” said Chuck Glover, graphics staffer at RSPAC.

Simply e-mail an attachment (jpg or gif preferred), or any questions or comments you have about your project's graphics submissions, to cgllover@rspac.ivv.nasa.gov.

Highlights & Happenings

News from MCET

Francesca Casella
franc@mcet.edu

PlaneMath Posts Eight New Activities

Lewis Kraus
kraus@infouse.com

The PlaneMath project at InfoUse has posted eight new activities. Cumulatively entitled PlaneMath Enterprises, these activities cover the 6th and 7th grade levels of the National Council of Teachers of Mathematics (NCTM) mathematics content standards.

Students become "employees" of PlaneMath Enterprises and are asked to design a corporate jet for a customer. First, however, they must go through a training program. The eight training activities cover forces of flight, basic elements of an airplane, how control surfaces work, fuselages, wing shapes, airfoils, propulsion, and evaluation of designs. Highlights of these new training activities include two working wind tunnels and a simulated flying activity.

The design of the corporate jet will be posted soon. Using actual calculations from wind tunnel data at NASA Ames, the design activity will allow the students to select seat width, seat configuration, leg room, wing size, and engine type for the eight-passenger jet. All the selections must result in a package that conforms to the customer's specifications for plane performance and cost. A flight test and a wind tunnel test will provide additional information.

PlaneMath's new activities, like the ones previously designed for the 4th and 5th grades, are designed to be accessible to students with physical disabilities. The new activities require a Shockwave plug-in.

More than 350 teachers have registered their classrooms with PlaneMath, covering nearly 11,000 students, over 450 of whom have a disability.

News from the Schools

The teachers at Malden Middle School decided to adopt an interdisciplinary approach to presenting the Take Off! program to their students this year, with every teacher developing a specific area.

The students are already using e-mail and have asked for information on how to forward questions to Take Off! career guests and aeronautics experts. They were told about the NASA Quest "Aero Design Team Online" programs, and instructed on how to participate online and offline. A number of Internet student accounts are available through the project, and the teachers have decided to offer them to selected students. There are some concerns regarding students' use of the accounts on the school's grounds. The students would like to interact with other schools, and anyone who is interested in communicating with them should forward messages to Aviclub@meol.net.

The students at East Boston High School have also started to use the Take Off! program and have sent their first e-mail messages. Not surprisingly, the students seem to be ahead of the teacher in understanding and using the technology, and they are now helping him troubleshoot networking problems.

The students at Randolph Junior/Senior High School and Danvers High School will view the Take Off! program during April. The computer at Randolph will be rebuilt to allow the use of the flight simulation software that has become so popular with the students. The Internet sessions will become easier with the new, more powerful platform. The computer retrieved from Dorchester High School (after the school declined to participate in the project for the final year) will be delivered to the teachers at Danvers after it receives an upgrade in hardware and software. Danvers High School joined Take Off! using a grant from the Medtronic Foundation, but funding was not sufficient to equip the teachers with computers.

The Tucson Unified School District in Tucson, AZ, has asked for permission to extend the broadcast rights for Take Off! Part II through the next academic year. The Take Off! broadcast through the Tucson Unified School District (which serves over 63,000 students, of which 2,379 are Native American) is made possible through a grant from the America West Airline Foundation. In the words of Donna Flenner, media acquisition specialist for the school district, the series "...Take Off! Part II was great! TUSD Channel 53 broadcast the series during March and we received many calls from teachers...They are excited about the program and love the printed materials."

The Web Site

All bugs have been fixed. The Web development team is beta testing the front page and the new career cards before the updates go up around the middle of April. The IS department is evaluating commercially available applications capable of analyzing and generating statistics for Internet traffic on multiple sites. The amount of time required to customize off-the-shelf packages will be compared to The Inquisitor (already partially running on the Web server), which has posed some unexpected challenges to becoming fully functional.

The Final Take Off! Kit

Work on the production of the final Take Off! cut continued throughout March, and is expected to continue at the same intense pace for the next two months. The rundown for the first tape, with appropriate timing, video and graphic inputs, and an outline of the content, is ready. Editing will begin in April.

If you would like to be on the LTP Bulletin mailing list, please send e-mail to Scott Gillespie at: sgillespie@rspac.ivv.nasa.gov, or write to: BDM/RSPAC, 100 University Drive, Fairmont, WV 26554. Phone: (304) 367-8324, fax: (304) 367-8211.

H

ighlights

& Happenings (cont.)

Idaho SPARK March Highlights

Kay Brothers
brothers@uidaho.edu

March brought a new round of in-service teacher support, curriculum development, and participation in the Idaho State Career Pathways meeting. Idaho SPARK developed and delivered a pilot project, *Engineering is Elementary: Aeronautics (EEA)*, designed to provide aeronautics and engineering enrichment to rural, disadvantaged, and Native American youth and their teachers.

EEA combines the excitement of aeronautics with multiple content subjects in the elementary curriculum (science, mathematics, reading, writing) to harness students' natural excitement and abilities for learning. EEA pilot schools include Lapwai Elementary School, which is located on the Nez Perce Reservation, and Priest River Elementary School, which is located in rural northern Idaho. Grades two, three, and four are represented.

EEA was designed to include a graduate level in-service course which modeled appropriate content, terminology, classroom activities, Internet usage, and student assessment. For example, EEA introduced the engineering process as outlined by Dr. Steven Penoncello for Idaho SPARK teachers and followed this discussion with a classroom-appropriate, hands-on, minds-on activity that included student assessment. Each concept was introduced, discussed, and explored in this manner.

Concepts included in EEA are the engineering process, principles of flight, energy, force, torque, levers, pressure, velocity, Bernoulli's principle, flight control surfaces, gears and gearing, and using LabView to control LEGO drivers (postponed due to hardware issues).

The EEA pilot curriculum was gathered from selected NASA aeronautics CAN project sites, Idaho SPARK in-service curricula, LEGO curriculum materials, *Design Technology: Children's Engineering*, by Dunn and Larson (1990), and the National Science Standards. Aeronautics CAN project Web sites included Idaho SPARK, LEGO Data Acquisition and Prototyping System (LDAPS), and K-8 Aeronautics Internet Textbook. Additional NASA Web sites included Aero Design Team Online, F-18 SRA Online, Ames Aerospace Encounter, and BADWEB.

Formative Reflections and Initial Findings

Content and delivery were appropriate. The pilot teachers actively participated and asked questions. They immediately jumped to a discussion of *where* and *when* in their classrooms EEA content would fit and be included, and they shared additional ways to approach the different concepts and introduce them to their students.

The online content was sufficient for concepts discussed during the in-service course. Additional explanations and examples were needed in the case of Bernoulli's principle, levers, and gears.

For the purpose of this pilot project, the sail car, and the bubble machine, examples will be developed. The teachers have indicated a desire to have one of the box fan airplane models (LDAPS Web site image) available for classroom use. They don't necessarily want the students to build it, but they do want them to see it and use it as a way to check for understanding.

Idaho State Career Pathways

Idaho SPARK and Eagles in Aerospace were invited to participate in the Idaho State Career Pathways meeting held in Boise on March 30. Idaho State Career Pathways is a newly developed career exploration curriculum for middle school students. A beta version can be viewed at <http://acte.ed.uidaho.edu/ecp/>.

The initial structure is online and a draft publication has been distributed. Plans are to create an Internet-based program that will be available as a CD-ROM and in print form. SPARK and Eagles were asked to address

issues regarding inclusion of Native American students in the curriculum. Also, the current inclusion program only partially addresses gender.

While Idaho SPARK and Eagles in Aerospace do not exactly fit the pathway structure, they will be used as models for inclusion and as a link. This meeting and involvement will help SPARK and Eagles attain statewide dissemination.

N

ews

—Bytes (cont.)

(continued from page 1)

shops, and courses. Most LTC events are archived.

Keywords: K-12, education, engineering, science, education, adventure

Try to bookmark the top 100 sites, because as you post, you may end up deep in an engine's individual pages and never be able to return using the back button. It's a good idea to keep the descriptions short, because most search engines have size limitations.

There are a number of free online services that will add your listing to many search engines at once. I did not use these because when you submit by hand you can submit metatags, multiple keyword combinations, etc. These are things that will help get your page noticed and placed in more categories on more top-level hierarchies. Doing it by hand is still the best way. Please feel free to e-mail me if you have any questions about posting to search engines.

This bulletin will also be available in Adobe Acrobat format on the Developers' Workshop Web site at: <http://developers.ivv.nasa.gov/collab/pubs/bulletin/>



NASA's Learning Technologies Project (LTP) Bulletin is a monthly publication produced by the Remote Sensing Public Access Center (RSPAC). RSPAC is a cooperative project of NASA's Office of Aeronautics' High Performance Computing and Communications (HPCC) program, BDM International, and West Virginia University. RSPAC is located at the NASA Software Independent Verification and Validation (IV&V) facility in Fairmont, West Virginia.

RSPAC/BDM
WVU/NASA IV&V Facility
100 University Drive
Fairmont, WV 26554

April 1998



ADDRESS CORRECTION REQUESTED